OIPE
MAY 0 8 2001
PATENT & TRADEMARK OFFICE

H4

SEQUENCE LISTING

<110> NEELAM, Beena et al

<120> ISOLATED HUMAN RAS-LIKE PROTEINS,
NUCLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE
PROTEINS, AND USES THEREOF

<130> CL001112

<140> 09/778,963
<141> 2001-02-08

<160> 5

<170> FastSEQ for Windows Version 4.0

09778963 - 050801

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Thr Pro Thr Ile Glu Asp Phe His Arg Lys Val Tyr Asn Ile Arg Gly
    50                  55                  60
Asp Met Tyr Gln Leu Asp Ile Leu Asp Thr Ser Gly Asn His Pro Phe
65                  70                  75                  80
Pro Ala Met Arg Arg Leu Ser Ile Leu Thr Gly Asp Val Phe Ile Leu
                85                  90                  95
Val Phe Ser Leu Asp Asn Arg Glu Ser Phe Asp Glu Val Lys Arg Leu
            100                 105                 110
Gln Lys Gln Ile Leu Glu Val Lys Ser Cys Leu Lys Asn Lys Thr Lys
        115                 120                 125
Glu Ala Ala Glu Leu Pro Met Val Ile Cys Gly Asn Lys Asn Asp His
    130                 135                 140
Gly Glu Leu Cys Arg Gln Val Pro Thr Thr Glu Ala Glu Leu Leu Val
145                 150                 155                 160
Ser Gly Asp Glu Asn Ser Ala Tyr Phe Glu Val Ser Ala Lys Lys Asn
                165                 170                 175
Thr Asn Val Asp Glu Met Phe Tyr Val Leu Phe Ser Met Ala Lys Leu
            180                 185                 190
Pro His Glu Met Ser Pro Ala Leu His Arg Lys Ile Ser Val Gln Tyr
        195                 200                 205
Gly Asp Ala Phe His Pro Arg Pro Phe Cys Met Arg Arg Val Lys Glu
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        35                  40                  45
Cys Thr Cys Cys Cys Thr Gly Cys Cys Thr Cys Cys Thr Cys Thr Gly
    50                  55                  60
Thr Cys Thr Gly Ala Cys Thr Cys Cys Cys Thr Gly Cys Cys Thr Cys
65                  70                  75                  80
Cys Cys Cys Thr Cys Thr Cys Thr Gly Thr Cys Thr Cys Ala Cys Thr
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Gly Cys Cys Thr Cys Cys Thr Cys Thr Cys Thr Cys Thr Gly Ala Cys
            100                 105                 110
Thr Cys Thr Cys Thr Gly Cys Cys Thr Cys Cys Thr Cys Thr Cys Thr
        115                 120                 125
Cys Thr Gly Ala Cys Thr Cys Cys Cys Thr Gly Cys Cys Thr Cys Cys
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Thr Cys Thr Cys Thr Cys Thr Gly Ala Thr Thr Cys Cys Cys Thr Gly
145                 150                 155                 160
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Cys Cys Thr Cys Cys Thr Cys Thr Cys Thr Thr Thr Gly Ala Cys Thr
            180                 185                 190
Cys Cys Cys Thr Gly Cys Cys Thr Cys Cys Thr Cys Thr Cys Thr Cys
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Cys Gly Ala Thr Thr Cys Thr Cys Thr Gly Cys Gly Thr Cys Thr Thr
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Thr Gly Ala Cys Thr Cys Cys Cys Thr Gly Cys Cys Thr Cys Cys Thr
225                 230                 235                 240
Cys Thr Cys Thr Cys Thr Gly Ala Cys Thr Cys Cys Cys Thr Gly Ala
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Ala Gly Cys Thr Cys Ala Thr Thr Cys Ala Gly Thr Cys Ala Thr Thr
            260                 265                 270
Gly Cys Thr Ala Thr Cys Ala Ala Cys Thr Cys Gly Thr Cys Thr Gly
        275                 280                 285
Thr Ala Cys Cys Ala Ala Gly Cys Thr Cys Thr Ala Gly Gly Cys Thr
    290                 295                 300
Gly Gly Ala Gly Gly Cys Thr Gly Gly Gly Cys Ala Gly Gly Gly Cys
305                 310                 315                 320
Ala Ala Thr Gly Ala Thr Gly Gly Ala Gly Ala Cys Ala Ala Ala Thr
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Ala Cys Thr Gly Thr Cys Cys Cys Thr Gly Gly Gly Ala Gly Cys Thr
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Thr Cys Thr Gly Gly Cys Cys Cys Cys Thr Thr Thr Cys Cys Cys Ala
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370 375 380
Gly Thr Gly Ala Cys Cys Gly Cys Cys Ala Gly Cys Ala Gly Ala Gly
385 390 395 400
Thr Cys Ala Ala Gly Cys Thr Gly Thr Cys Thr Gly Cys Ala Gly Ala
405 410 415
Ala Gly Gly Ala Cys Thr Thr Gly Gly Gly Gly Ala Gly Gly Gly Gly
420 425 430
Gly Cys Thr Gly Thr Cys Ala Thr Gly Gly Gly Gly Thr Ala Gly Gly
435 440 445
Gly Cys Thr Thr Cys Thr Thr Thr Cys Cys Cys Cys Cys Cys Ala Thr
450 455 460
Cys Thr Cys Thr Gly Cys Thr Gly Ala Ala Gly Gly Cys Cys Cys Ala
465 470 475 480
Gly Gly Cys Thr Gly Gly Cys Thr Gly Ala Gly Ala Cys Ala Gly Cys
485 490 495
Cys Cys Cys Gly Gly Cys Ala Gly Ala Gly Ala Cys Thr Gly Ala Gly
500 505 510
Ala Ala Gly Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Gly Thr
515 520 525
Gly Gly Thr Cys Thr Gly Gly Cys Ala Gly Cys Cys Cys Cys Cys Thr
530 535 540
Cys Thr Cys Cys Ala Cys Cys Cys Thr Cys Cys Thr Cys Thr Cys Thr
545 550 555 560
Cys Thr Cys Ala Thr Thr Thr Cys Cys Thr Gly Cys Cys Thr Cys Cys
565 570 575
Cys Ala Cys Ala Cys Gly Thr Ala Thr Gly Cys Cys Cys Thr Gly Gly
580 585 590
Gly Cys Ala Cys Cys Thr Cys Ala Thr Cys Ala Gly Gly Gly Cys Thr
595 600 605
Gly Cys Cys Cys Thr Ala Gly Gly Gly Gly Ala Gly Gly Gly Cys Cys
610 615 620
Cys Thr Cys Cys Thr Thr Gly Gly Cys Ala Cys Ala Gly Cys Cys Cys
625 630 635 640
Cys Thr Gly Gly Gly Cys Cys Ala Gly Thr Cys Ala Gly Gly Thr Gly
645 650 655
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660 665 670
Gly Ala Ala Gly Gly Thr Cys Cys Cys Ala Gly Ala Gly Thr Gly Gly
675 680 685
Gly Gly Cys Thr Thr Cys Ala Gly Gly Cys Ala Ala Ala Cys Cys Cys
690 695 700
Ala Ala Ala Gly Ala Cys Ala Gly Ala Gly Cys Cys Cys Thr Thr Thr
705 710 715 720
Gly Cys Cys Ala Thr Thr Thr Gly Ala Thr Gly Ala Ala Thr Gly Cys
725 730 735
Ala Cys Ala Gly Ala Cys Cys Cys Thr Thr Thr Ala Thr Thr Gly Ala
740 745 750
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755 760 765
Thr Gly Gly Cys Ala Thr Gly Gly Cys Ala Gly Thr Thr Thr Thr Gly
770 775 780
Thr Gly Gly Gly Ala Thr Ala Ala Ala Thr Thr Cys Ala Ala Ala Gly
785 790 795 800
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865                 870                 875                 880
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Thr Thr Cys Thr Gly Ala Gly Cys Thr Cys Gly Gly Gly Gly Cys Ala
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Gly Ala Cys Cys Ala Cys Cys Thr Gly Gly Gly Ala Thr Cys Ala Ala
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Ala Cys Cys Thr Cys Thr Cys Cys Thr Cys Thr Gly Cys Thr Gly Gly
    930                 935                 940
Thr Thr Ala Cys Thr Gly Gly Cys Thr Gly Thr Gly Cys Ala Ala Cys
945                 950                 955                 960
Thr Gly Thr Ala Ala Gly Cys Ala Ala Gly Thr Ala Ala Thr Thr Thr
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Ala Ala Cys Cys Thr Cys Thr Cys Thr Gly Thr Gly Cys Cys Thr Cys
            980                 985                 990
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Cys Ala Cys Cys Thr Gly Cys Thr Thr Thr Cys Thr Gly Gly Gly Gly
1025                1030                1035                1040
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Cys Thr Thr Ala Gly Thr Gly Cys Gly Gly Gly Gly Cys Thr Thr Gly
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Cys Ala Ala Gly Thr Gly Gly Cys Ala Gly Cys Ala Gly Thr Thr Gly
    1170                1175                1180
Thr Cys Gly Thr Cys Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys
1185                1190                1195                1200
Ala Gly Gly Cys Cys Thr Gly Gly Gly Gly Thr Cys Cys Gly Cys Cys
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            1220                1225                1230
Thr Ala Thr Thr Gly Thr Gly Cys Ala Cys Gly Thr Cys Cys Cys Thr
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Thr Thr Gly Thr Gly Ala Thr Thr Cys Ala Thr Thr Cys Ala Thr Cys
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1345 1350 1355 1360
Gly Thr Thr Thr Cys Cys Thr Gly Cys Ala Cys Ala Gly Ala Gly Gly
1365 1370 1375
Cys Thr Gly Gly Thr Ala Gly Thr Thr Gly Gly Gly Cys Ala Gly Gly
1380 1385 1390
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1460 1465 1470
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Cys Gly Ala Thr Gly Gly Thr Gly Thr Thr Gly Gly Ala Ala Ala Gly
1490 1495 1500
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Cys Cys Thr Gly Gly Gly Gly Thr Gly Gly Gly Gly Ala Cys Cys Gly
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Thr Ala Ala Ala Ala Ala Cys Ala Gly Thr Gly Cys Cys Thr Thr Thr
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1825 1830 1835 1840

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1845 1850 1855

Cys Thr Thr Cys Ala Gly Ala Gly Ala Gly Cys Ala Gly Gly Thr Gly
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1875 1880 1885

Cys Thr Gly Ala Ala Ala Cys Ala Thr Ala Ala Gly Gly Gly Gly Ala
1890 1895 1900

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1905 1910 1915 1920

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1925 1930 1935

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1940 1945 1950

Thr Cys Thr Cys Ala Gly Cys Ala Gly Ala Gly Cys Thr Cys Ala Ala
1955 1960 1965

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1970 1975 1980

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1985 1990 1995 2000

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2005 2010 2015

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2020 2025 2030

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2035 2040 2045

Gly Cys Thr Gly Thr Gly Ala Ala Gly Ala Gly Cys Cys Thr Thr Thr
2050 2055 2060

Gly Gly Gly Gly Thr Gly Ala Gly Cys Cys Thr Gly Gly Thr Gly Gly
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Ala Gly Cys Cys Thr Gly Cys Gly Gly Gly Thr Thr Thr Gly Cys Thr
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2245 2250 2255
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Ala Thr Thr Cys Thr Cys Ala Cys Cys Ala Thr Ala Gly Ala Thr Ala
2580 2585 2590
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2595 2600 2605
Ala Cys Cys Ala Thr Gly Thr Gly Cys Thr Gly Ala Gly Cys Cys Cys
2610 2615 2620
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2625 2630 2635 2640
Gly Ala Ala Thr Thr Gly Gly Gly Cys Thr Cys Ala Thr Thr Thr Thr

09/538,824 - 03/30/00

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2945                2950                2955                2960
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Cys Cys Gly Ala Gly Cys Cys Ala Thr Gly Ala Thr Gly Ala Ala Gly
        2995                3000                3005
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Ala Cys Thr Gly Cys Ala Cys Gly Cys Thr Cys Ala Gly Thr Gly Thr
3025                3030                3035                3040
Gly Cys Cys Cys Gly Cys Cys Ala Ala Ala Ala Ala Cys Thr Cys Ala
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Thr Ala Cys Cys Gly Cys Ala Thr Gly Gly Thr Gly Gly Thr Gly Cys
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Gly Gly Gly Cys Ala Ala Gly Ala Gly Cys Thr Cys Cys Ala Thr Cys
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Gly Thr Gly Thr Cys Thr Cys Gly Cys Thr Thr Cys Cys Thr Cys Ala
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Ala Thr Gly Gly Cys Cys Gly Cys Thr Thr Thr Gly Ala Gly Gly Ala
3125 3130 3135
Cys Cys Ala Gly Thr Ala Cys Ala Cys Ala Cys Cys Cys Ala Cys Cys
3140 3145 3150
Ala Thr Cys Gly Ala Gly Gly Ala Cys Thr Thr Cys Cys Ala Cys Cys
3155 3160 3165
Gly Thr Ala Ala Gly Gly Thr Ala Thr Ala Cys Ala Ala Cys Ala Thr
3170 3175 3180
Cys Cys Gly Cys Gly Gly Cys Gly Ala Cys Ala Thr Gly Thr Ala Cys
3185 3190 3195 3200
Cys Ala Gly Cys Thr Cys Gly Ala Cys Ala Thr Cys Cys Thr Gly Gly
3205 3210 3215
Ala Thr Ala Cys Cys Thr Cys Thr Gly Gly Cys Ala Ala Cys Cys Ala
3220 3225 3230
Cys Cys Cys Cys Thr Thr Cys Cys Cys Cys Gly Cys Cys Ala Thr Gly
3235 3240 3245
Cys Gly Cys Ala Gly Gly Cys Thr Gly Thr Cys Cys Ala Thr Cys Cys
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Thr Cys Ala Cys Ala Gly Gly Thr Gly Ala Gly Gly Cys Cys Cys Ala
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09/980,904 - 05/06/02

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Docket No. 5688-0

| Claim | Independent | Dependent |
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| 28. | | |
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| 30. | | |
| Total | 6 | 17 |

23 Total : 23

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:NEELAM et al

Serial No.09/778,963

Filed: February 8, 2001

For: ISOLATED HUMAN RAS-LIKE PROTEINS, NUCLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE PROTEINS, AND USES THEREOF

OIPE JC131 MAY 0 8 2001 PATENT & TRADEMARK OFFICE

Art Unit:

Examiner:

Atty. Docket: CL001112

Docket No. CL001112

**SUBMISSION OF SEQUENCE LISTING UNDER 37 C.F.R. § 1.821(a)**

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Sir:

In compliance with 37 C.F.R. § 1.821(a), Applicants submit the Sequence Listing, including the paper copy of the Sequence Listing and the computer readable copy of the Sequence Listing.

**In the Specification**:

Please enter the Sequence Listing between the specification and the claims of the above-identified application.

## REMARKS

In accordance with 37 C.F.R. § 1.821(f), the paper copy of the Sequence Listing and the computer readable copy of the Sequence Listing submitted herewith in the above application are the same.

In accordance with 37 C.F.R. § 1.821(g), this submission includes no new matter.

It is respectfully believed this application is now in condition for examination. Early notice to this effect is earnestly solicited.

Respectfully submitted,

CELERA GENOMICS

By: Robert A. Millman

**Robert A. Millman**
Reg. No. 36,217

Date: May 8, 2001

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45 West Gude Drive, C2-4#20
Rockville, MD 20850
Tel: 240-453-3067
Fax: 240-453-3084

PE2NUCSEQ.PRO